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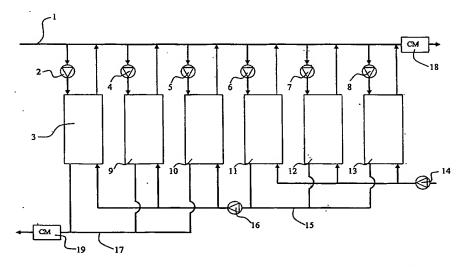
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(54) Title: IMPROVED ELECTRODIALYSIS SYSTEM AND PROCESS



(57) Abstract: A treatment system and method for continuous deionization of a biologically derived feed stream includes a plurality of electrodialysis units (3, 9, 10, 11, 12, 13) arranged in stages along a treatment line, and stages are controlled such that the feed stream attains a certain quality before entering the next stage. The feed and concentrate streams move in generally opposite sense along the line, matching fluid characteristics of dilute and concentrate cells. The treatment line has two or more stages. Systems may have phased staging operations, and cell constructions may adapt the electrodialysis units for enhanced processing of difficult process fluids. A controller sets operating potentials in different electrical stages, and simple control parameters optimize ion removal and current efficiency without polarization of the fluid. The invention also includes phased staging of reversal operation, and cell constructions or fillings that adapt the treatment cells for enhanced processing.

05/044427 A1

WO 2005/044427 A1



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